claim 9, wherein the dimensions of said preliminary molded member before final molding and in a direction of the molding pressure are set to be about 1.0 to about 2.0 times the dimensions of said final molded member.

REMARKS

Claims 1-5 and 8-15 are pending. These have been examined and rejected as follows: (1) claims 1-5 and 8-15 under 35 USC 112, second paragraph as indefinite because in claim 1"....it is still unclear what is meant by 'bonding graphite powder and a thermosetting resin'," and "Mpa" should be "MPa;" because in claim 2 "....there is no antecedent basis for 'wherein the composition ratio';" because in claim 8 "....it is unclear what is meant by 'in which composition the ratios are set';" because in claim 9 "...there is no antecedent basis for 'wherein the composition ratio';" and because in claims 14 and 15 "....it is unclear what is meant by 'wherein dimensions.....before molding and in a direction of the molding pressure are set';" (2) claims 1, 2, 5, 8, 9 and 11-15 under 35 USC 102(e) over Braun et al; (3) claims 1, 2 and 5 as unpatentable under 35 USC 103(a) over Braun et al; (4) claims 3, 4 and 10 as unpatentable under 35 USC 103(a) over Baun et al in view of Uemura et al; and (5) claims 1, 3-5, 8, 10 and 11 under the judicially created doctrine of obviousness-type double patenting over claims 7 and 8 of copending application No. 09/660,291.

(1)

By "bonding graphite powder and a thermosetting resin" is meant that the graphite powder particles are bonded to each other by the thermosetting resin. Claim 1 has been amended to clarify this point. Claims 1 and 8 have been amended to change "Mpa" to "MPa", as suggested by the examiner. Claim 8 has been amended, as has claim 1, to more clearly recite the ratios of

graphite powder and thermosetting resin in the complex which forms the separator. Claims 14 and 15 have been amended to relate the dimensions of the preliminary mold to that of the final mold.

As amended, the claims are now believed to be definite and in conformity with the provisions of 35 USC 102.

(2) & (3)

Before considering the art rejections a review of the essence of the invention should prove helpful. In the present invention, first, a complex is cold-molded at a pressure of 2 to 10 MPa, thereby forming a preliminary molded member. Next, the preliminary molded member is compressed at a pressure of 20 to 50 MPa, which is higher than that applied in the cold-molding stage, thereby obtaining a final molded member.

In other words, in the present invention, the pressure exerted when the preliminary molded member is molded is set to be lower than that exerted when the final molded member is molded.

Accordingly, the preliminary molded member is molded so as to be relatively soft, and the resin in the preliminary molded member provides sufficiently high fluidity in the final molding stage. As a result, a strong resin matrix is formed when it is molded into a final shape, thereby making it possible to obtain a preferably shaped separator whose bending strength is great and volume resistivity is small.

Turning now to Braun et al, Braun et al relates to a fuel cell collector plate. First, a molding composition comprised of graphite powders and a polymer resin is compressed at a pressure of 5 to 100 MPa. After the obtained preform (i.e., preliminary molded member) is

placed under a pressure of 1 to 15 MPa to be degassed, the pressure is increased to 5 to 57 MPa, thereby molding it into a final shape.

In other words, in Braun et al, the pressure for molding the preform (i.e., preliminary molded member) is set to be equal to or higher than that exerted in the final molding. In view of the relation between the pressure exerted in molding the preform and that exerted in molding it into a final shape, Braun et al is completely different from the present invention. That is, Braun et al neither discloses nor suggests the structure wherein the pressure exerted when the preliminary molded member is molded is set to be lower than that exerted when the final molded member is molded. Therefore, Braun et al is completely different from the present invention, in structure and function.

Owing to these differences, in Braun et al, the preform is compressed excessively hard, whereby the polymer resin in the preform cannot flow enough in the final molding. So, there is the possibility that a sufficiently strong matrix made of a polymer resin cannot be formed. In case that the matrix made of the polymer resin cannot be fully formed, problems are caused, a decrease in binding strength or an increase in the volume resistivity.

(4)

Uemura et al relates to a method for producing a fuel cell separator comprising the steps of: laminating cellulose sheets into which thermosetting resin is impregnated, contact bonding them, hardening them and baking them.

However, Uemura et al neither discloses nor suggests the following description: "after the complex which is configured by bonding graphite powders and thermosetting resin is preliminary molded, it is molded into a final shape by the higher pressure." On this point, Uemura

et al is completely different from the present invention in structure.

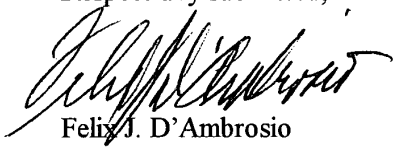
(5)

As mentioned above, the present invention claims the relation between the pressure for molding a preliminary molded member and that for molding it into a final shape.

On the other hand, 09/660,291 claims a completely different structure. Therefore, double patent is not applied to this case.

In view of the foregoing, reconsideration and re-examination are respectfully requested, and claims 1-5 and 8-15 found allowable.

Respectfully submitted,



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MARKED-UP COPY OF CLAIMS 1, 8, 14 AND 15

1. (Thrice Amended) A separator for a fuel cell consisting of a complex which is configured by bonding graphite powder particles to each other by [and] a thermosetting resin to form the separator, wherein

[the composite] a composition ratio of said graphite powder in said complex is set to 85 to 97 wt.%, and a [composite] composition ratio of said thermosetting resin in said complex is set to 3 to 15 wt.% [of said complex],

an average particle diameter of said graphite powder is set to a range of 15 to 125 μm,

said complex is first cold-molded at a pressure of 2 to 10 [Mpa] MPa to form a preliminary molded member, and

said preliminary molded member resultantly obtained is molded at a pressure of [10 to 100 Mpa] 20 to 50 MPa.

8. (Thrice Amended) A method of producing a separator for a fuel cell configured by molding a complex of graphite powder and thermosetting resin, in which composition [the] ratios of graphite powder to thermosetting resin are set to 85 to 97 wt.% of graphite powder[,] and 3 to 15 wt.% of a thermosetting resin, and an average particle diameter of said graphite powder is set to a range of 15 to 125 μm, comprising the steps of:

cold-molding said complex into a shape similar to a final molded shape at a pressure of 2 to 10 [Mpa] MPa forming thereby a preliminary molded member, and

placing said preliminary molded member in a mold to mold it into a final

shape by applying a pressure of [10 to 100 Mpa] 20 to 50 MPa.

14. (Amended) A method of producing a separator for a fuel cell according to claim 8, wherein the dimensions of said preliminary molded member before final molding and in a direction of the molding pressure are set to be about 1.0 to about 2.0 times the dimensions of said final molded member.

15. (Amended) A method of producing a separator for a fuel cell according to claim [12] 9, wherein the dimensions of said preliminary molded member before final molding and in a direction of the molding pressure are set to be about 1.0 to about 2.0 times the dimensions of said final molded member.